

CLAIMS

1. (Currently Amended) A multilayer film or sheet comprising:
 - a.) a first co-extruded polymeric layer consisting essentially of either an ionomer or an ionomer and an additive; and
 - b.) a second co-extruded polymeric layer (1) selected from the group consisting of ionomer and ionomer-polyamide blend or (2) selected from the group consisting of the combination of ionomer and an additive[,] and the combination of ionomer-polyamide blend[,] and an additive; wherein the first co-extruded polymeric layer is surface layer, the second co-extruded layer is in contact with said first co-extruded polymeric layer, and the additive is one or more UV stabilizer, UV absorber, antioxidant, thermal stabilizer, anti-stat additive, processing aid, fiber glass and mineral filler, anti-slip agent, plasticizer, nucleating agent, pigment, dye, flake, or mixtures thereof.
 2. (Canceled)
 3. (Previously Presented) A multilayer film or sheet of Claim 1 wherein said ionomer consists essentially of a copolymer derived from ethylene and α , β -ethenically unsaturated C₃ to C₈ carboxylic acid wherein said copolymer is partially neutralized with metal ions.
 4. (Withdrawn) A multilayer film or sheet of Claim 1 wherein said ionomer-polyamide blend consists essentially of one or more polyamide which forms a continuous phase or co-continuous phase with one or more ionomer dispersed therein, said ionomer is present in the range from 60 to 40 weight percent and said polyamide is present in the range from 40 to 60 weight percent based on the total weight of ionomer and polyamide, said ionomer consisting essentially of a copolymer derived from ethylene and α , β -ethenically unsaturated C₃ to C₈ carboxylic acid wherein said copolymer is partially neutralized with metal ions; wherein the average acid content of copolymer prior to neutralization is present in a sufficiently high percentage such that neutralization in the range of 55 to 100 mole percent of the acid present at melt temperature with one or more metal cations increases the viscosity of the ionomer above that of the polyamide.
 5. (Canceled)
 6. (Previously presented) A multilayer film or sheet of Claim 1 wherein said first co-extruded polymeric layer is clear and said second co-extruded polymeric layer comprises the polymer and an additive selected from pigment, dye, flake, or mixtures thereof.
 7. (Withdrawn) A multilayer film or sheet comprising:

7. (Withdrawn) A multilayer film or sheet comprising:
a.) a first co-extruded polymeric layer consisting essentially of ionomer;
b.) a second co-extruded polymeric layer consisting essentially of very low density polyethylene in contact with said first co-extruded polymeric layer, wherein at least one of
5 said first or second co-extruded polymeric layers contain pigments, dyes, flakes, or mixtures thereof; and
c.) at least one additional third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.
8. (Canceled)
- 10 9. (Withdrawn) A multilayer film or sheet of Claim 7 wherein said ionomer consisting essentially of a copolymer derived from ethylene and α , β -ethenically unsaturated C₃ to C₈ carboxylic acid wherein said copolymer is partially neutralized with metal ions.
10. (Canceled)
- 15 11. (Withdrawn) A multilayer film or sheet of Claim 7 wherein said first co-extruded polymeric layer is clear and said second co-extruded polymeric layer contains pigments, dyes, flakes, or mixtures thereof.
12. (Withdrawn) A multilayer film or sheet comprising:
a.) a first co-extruded polymeric layer consisting essentially of ionomer;
b.) a second co-extruded polymeric sheet layer consisting essentially of ethylene polar
20 copolymer in contact with said first co-extruded polymeric layer, wherein at least one of said first or second co-extruded polymeric layers contain pigments, dyes, flakes, or mixtures thereof; and
c.) at least one additional third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.
- 25 13. (Canceled)
14. (Withdrawn) A multilayer film or sheet of Claim 12 wherein said ionomer consisting essentially of a copolymer derived from ethylene and α , β -ethenically unsaturated C₃ to C₈ carboxylic acid wherein said copolymer is partially neutralized with metal ions.
15. (Canceled)

16. (Withdrawn) A multilayer film or sheet of Claim 12 wherein said first co-extruded polymeric layer is clear and said second co-extruded polymeric layer contains pigments, dyes, flakes, or mixtures thereof.

17. (Withdrawn) A multilayer film or sheet comprising:

- 5 a.) a first co-extruded polymeric layer consisting essentially of ionomer;
 b.) a second co-extruded polymeric sheet layer consisting essentially of ethylene polar copolymer in contact with said first co-extruded polymeric layer, wherein at least one of said first or second co-extruded polymeric layers contain pigments, dyes, flakes, or mixtures thereof; and
10 c.) at least one additional third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

18. (Withdrawn) A multilayer film or sheet of Claim 17 wherein said ionomer-polyamide blend consists essentially of one or more polyamide which forms a continuous phase or co-continuous phase with one or more ionomer dispersed therein, said ionomer is present in the range from 60 to 40 weight percent and said polyamide is present in the range from 40 to 60 weight percent based on the total weight of ionomer and polyamide, said ionomer consisting essentially of a copolymer derived from ethylene and α , β -ethenically unsaturated C₃ to C₈ carboxylic acid wherein said copolymer is partially neutralized with metal ions; wherein the average acid content of copolymer prior to neutralization is present in a sufficiently high percentage such that neutralization in the range of 55 to 100 mole percent of the acid present at melt temperature with one or more metal cations increases the viscosity of the ionomer above that of the polyamide.

20 19. (Cancelled)

25 20. (Withdrawn) A multilayer film or sheet of Claim 17 or 18 wherein said first co-extruded polymeric layer contains pigments, dyes, flakes, or mixtures thereof.

21. (Withdrawn) A multilayer film or sheet of Claim 17 or 18 wherein said second co-extruded polymeric layer is selected from the group consisting of ionomer, ionomer-polyethylene blend, ionomer-polyamide blend, very low density polyethylene, ethylene polar copolymer, and blends thereof.

30 22-42. (Cancelled)

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43. (Previously presented) An article comprising a substrate to which a multilayer film or sheet is adhered, wherein said multilayer film or sheet is the same as recited in claim 1, 3, 6, 54, 55, 56, 57, 58, 59, 60, 61, 64, 65, 66, 67, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, or 82.

44. (Canceled)

5 45. (Withdrawn) An article consisting essentially of a substrate to which a multilayer film or sheet is adhered, wherein said multilayer film or sheet comprises:

a.) a first co-extruded polymeric layer consisting essentially of ionomer;

b.) a second co-extruded polymeric layer consisting essentially of very low density polyethylene in contact with said first co-extruded polymeric layer, wherein at least one of 10 said first or second co-extruded polymeric layers contain pigments, dyes, flakes, or mixtures thereof; and

c.) at least one additional third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

46. (Canceled)

15 47. (Withdrawn) An article consisting essentially of a substrate to which a multilayer film or sheet is adhered, wherein said multilayer film or sheet comprises:

a.) a first co-extruded polymeric layer consisting essentially of ionomer;

b.) a second co-extruded polymeric sheet layer consisting essentially of ethylene polar copolymer in contact with said first co-extruded polymeric layer, wherein at least one of 20 said first or second co-extruded polymeric layers contain pigments, dyes, flakes, or mixtures thereof; and

c.) at least one third additional co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

48. (Canceled)

25 49. (Withdrawn) An article consisting essentially of a substrate to which a multilayer film or sheet is adhered, wherein said multilayer film or sheet comprises:

a.) a first co-extrusion polymeric layer consisting essentially of ionomer-polyamide blend;

b.) a second co-extruded polymeric layer in contact with said first co-extrude polymeric layer, wherein at least one of said first or second co-extruded polymeric layers contain

30 pigments, dyes, flakes, or mixtures thereof; and

c.) at least one additional third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

50-53. (Canceled)

54. (Previously presented) The multilayer film or sheet of claim 3 further comprising a third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

55. (Previously presented) The multilayer film or sheet of claim 6 further comprising a third co-extruded polymeric layer in contact with said second co-extruded polymeric layer.

56. (Previously presented) The multilayer film or sheet of claim 3 wherein the thickness of the multilayer film or sheet is about 1 to about 60 mils or about 8 to about 60 mils.

57. (Previously presented) The multilayer film or sheet of claim 6 wherein the thickness of the multilayer film or sheet is about 1 to about 60 mils or about 8 to about 60 mils.

10 58. (Previously presented) The multilayer film or sheet of claim 54 wherein the thickness of the multilayer film or sheet is about 1 to about 60 mils or about 8 to about 60 mils.

59. (Previously presented) The multilayer film or sheet of claim 55 wherein the thickness of the multilayer film or sheet is about 1 to about 60 mils or about 8 to about 60 mils.

15 60. (Previously presented) The multilayer film or sheet of claim 3 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

61. (Previously presented) The multilayer film or sheet of claim 6 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

20 62. (Previously presented) The multilayer film or sheet of claim 54 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

63. (Previously presented) The multilayer film or sheet of claim 55 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

25 64. (Previously presented) The multilayer film or sheet of claim 56 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

65. (Previously presented) The multilayer film or sheet of claim 59 wherein the thickness of the first co-extruded polymeric layer is about 1 to about 50 mils or about 2 to about 20 mils.

66. (Previously presented) The multilayer film or sheet of claim 3 wherein the ionomer in the first co-extruded polymeric layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer have flow properties that are matched to allow the ionomer in the first co-extruded layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer, when co-extruded, flow to the full width of the die.

67. (Previously presented) The multilayer film or sheet of claim 61 wherein the ionomer in the first co-extruded polymeric layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer have flow properties that are matched to allow the ionomer in the first co-extruded layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer, when co-extruded, flow to the full width of the die.

68. (Previously presented) The multilayer film or sheet of claim 65 wherein the ionomer in the first co-extruded polymeric layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer have flow properties that are matched to allow the ionomer in the first co-extruded layer and the ionomer or ionomer-polyamide blend in the second co-extruded polymeric layer, when co-extruded, flow to the full width of the die.

69. (Previously presented) The multilayer film or sheet of claim 1 wherein the first co-extruded polymeric layer has a Distinctness of Image (DOI) of at least 80 and a gloss that exceeds 60% at a 20 degree angle.

70. (Previously presented) The multilayer film or sheet of claim 6 wherein the first co-extruded polymeric layer has a Distinctness of Image (DOI) of at least 80 and a gloss that exceeds 60% at a 20 degree angle.

71. (Previously presented) The multilayer film or sheet of claim 67 wherein the first co-extruded polymeric layer has a Distinctness of Image (DOI) of at least 80 and a gloss that exceeds 60% at a 20 degree angle.

72. (Previously presented) The multilayer film or sheet of claim 68 wherein the first co-extruded polymeric layer has a Distinctness of Image (DOI) of at least 80 and a gloss that exceeds 60% at a 20 degree angle.

73. (Previously presented) The multilayer film or sheet of claim 1 wherein the second co-extruded polymeric layer is an ionomer.
74. (Previously presented) The multilayer film or sheet of claim 6 wherein the second co-extruded polymeric layer is an ionomer.
- 5 75. (Previously presented) The multilayer film or sheet of claim 54 wherein the second co-extruded polymeric layer is an ionomer.
76. (Previously presented) The multilayer film or sheet of claim 55 wherein the second co-extruded polymeric layer is an ionomer.
77. (Previously presented) The multilayer film or sheet of claim 56 wherein the second co-extruded polymeric layer is an ionomer.
- 10 78. (Previously presented) The multilayer film or sheet of claim 63 wherein the second co-extruded polymeric layer is an ionomer.
79. (Previously presented) The multilayer film or sheet of claim 65 wherein the second co-extruded polymeric layer is an ionomer.
- 15 80. (Previously presented) The multilayer film or sheet of claim 72 wherein the second co-extruded polymeric layer is an ionomer.
81. (Previously presented) The multilayer film or sheet of claim 3 wherein the second co-extruded polymeric layer is the ionomer-polyamide blend.
82. (Cancelled).
- 20 83. (Previously presented) The article of claim 43 wherein the substrate is metal, polymer, or polymer composite.
84. (Previously presented) The article of claim 83 wherein the substrate is metal, polymer, or polymer composite and the substrate optionally has a printed design or pattern and said multilayer film or sheet is clear.